

REMARKS

Upon entry of the present amendment, claims 1-3 will have been amended while claims 4-9 will have been canceled without prejudice or disclaimer. Additionally, claims 10-18 will have been submitted for consideration by the Examiner.

In view of the herein contained amendments and remarks, Applicants respectfully request reconsideration of each of the outstanding objections and rejections set forth in the above-mentioned Official Action. Such action is respectfully requested and is now believed to be appropriate and proper.

In the outstanding Official Action, the Examiner indicated consideration of Applicants Election with Traverse and indicated that the traversal was not persuasive. Accordingly, the Examiner deemed the Restriction Requirement proper and made the same final.

By the present Response, Applicants have canceled the "withdrawn from consideration" claims and reserve the right to file these claims in a divisional application. Nevertheless, Applicants submit, at least for the reasons set forth in the Response filed on February 10, 2005, that the basis for the Examiner's Restriction Requirement is inappropriate and improper.

In the outstanding Official Action, the Examiner objected to the drawings and required Figs. 2, 3, 5 and 6 to be designated by a legend such as "Prior Art". The Examiner asserted that these drawings illustrate only that which is old. Applicants respectfully traverse the above requirement with regard to Figs. 2, 3, 5 and 6. In this regard, Applicants have labeled Fig. 2 as Related Art but submit that the Examiner's requirement to similarly label Figs. 3, 5 and 6 is in error.

In this regard, Applicants note that Figs. 3, 5 and 6 are discussed in the "Preferred Embodiments of the Invention" rather than with respect to the prior art. In this regard, Applicants respectfully direct the Examiner's attention to, inter alia, paragraphs 0036, 0045 and 0051 which make reference to Figs. 3, 5 and 6. In contrast, only Figs. 2 and 9 are referenced in the Statement of Related Art and Fig. 9 has already been labeled as Prior Art. Accordingly, Applicants respectfully traverse the Examiner's objection to the drawings and request reconsideration and withdrawal thereof.

Applicants respectfully thank the Examiner for acknowledging receipt of papers submitted under 35 U.S.C. § 119 and for acknowledging their Claim for Foreign Priority based on such papers. Additionally, Applicants respectfully thank the Examiner for considering the documents filed in the Information Disclosure Statements filed on June 23 and July 28, 2004 by the return of the initialed and signed PTO-1449 Forms accompanying the Information Disclosure Statements.

In the outstanding Official Action, the Examiner objected to claims 1 and 2 because of a number of informalities. By the present Response, Applicants have eliminated the noted informalities and submit that claims are not subject to objection. In this regard, Applicants respectfully thank the Examiner for the detailed review of the claims and for pointing out these matters to Applicants so that they could be corrected.

In the outstanding Official Action, the Examiner rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by WHITE et al. (U.S. Patent No. 5,920,643). Applicants respectfully traverse the above rejection and submit that it is inappropriate with respect to the features recited in Applicants claims 1-3.

According to the features of Applicants invention, a method of manufacturing an annular oblique light illumination apparatus having a frustoconical inner circumferential surface is provided. The method includes providing a flexible wiring substrate on which a plurality of arcuate zonal wiring patterns for mounting light emitting devices each in the form of a developed frustconical shape are serpigiously formed continuously on a base film having a quadrangular shape. Applicants method further includes inserting electrodes of light emitting devices into the arcuate zonal wiring patterns and soldering the electrodes to the arcuate zonal wiring pattern. Further, Applicants method includes cutting out the arcuate zonal wiring patterns from the base film to form light emitting device arrays and fixing each light emitting device array to the arranging surface.

It is respectfully submitted that the combinations of features recited in Applicants claims are not taught, disclosed nor rendered obvious by WHITE et al. In particular and as noted above, according to the features of Applicants invention, the electrodes of the light emitting devices are inserted into the wiring patterns, are soldered to the base film, and the patterns are cut from the base film.

Further, according to the present invention, the arcuate zonal wiring patterns are formed on a base film having a quadrangular shape. This is a significant feature of Applicants invention which facilitates the soldering of the electrodes to the arcuate zonal wiring patterns. In particular, soldering of a circuit substrate often utilizes a flow soldering machine. When soldering using such a machine, it is necessary to maintain the printed circuit substrate within a solder tub and tension must be applied to the substrate to hold the substrate horizontally.

In this regard, Applicants note that WHITE et al. teaches soldering light emitting devices to a flexible circuit substrate after mounting the light emitting devices to the substrate which has been cut into an arch type shape. In particular, the desired arcuate sections are cut from a planar flexible circuit board, the light sources are installed at the desired locations and coupled to a common electrical connector. Thus, it is an essential feature of the WHITE et al. device that the light emitting devices are mounted and attached to an arcuately shaped circuit board. However, using such an arcuately shaped circuit board it becomes very difficult to apply appropriate tension to the circuit board substrate to hold the same horizontally during a soldering operation. This results from the fact that since both ends of an arcuate type substrate are not parallel, even if tension is applied to the ends, the substrate will not be easily held horizontally. It is further relatively easy to bend the outside arc portion of an arc type substrate, which will impact the soldering operation.

In direct contrast, according to the features of the present invention, the light emitting diodes are mounted onto a flexible wiring substrate, the electrodes of the light emitting devices are soldered to the wiring pattern and the wiring pattern is cut from the base film. Thus, during the soldering, the base film has a quadrangular shape and accordingly, it is easy to apply appropriate tension to the base film and to thus maintain the base film horizontal within the soldering apparatus.

According to the features of the present invention, the light emitting devices are soldered to a substrate (base film) and thereafter the arcuate pattern is cut from the quadrangular substrate. In direct contrast, WHITE et al. cuts out the arcuate substrate and solders the devices to it. Accordingly, it is apparent that Applicants claims are

clearly patentable over WHITE et al. as WHITE et al. does not disclose the combination of features recited in Applicants claims.

Thus, reconsideration and withdrawal of the outstanding rejection, together with an indication of the allowability of all the claims in the present application, is respectfully requested and is now believed to be appropriate and proper.

By the present Response, Applicants have submitted several additional claims for consideration. The recitations of these claims provide yet further basis for the patentability thereof in additional to the basis provided by their dependence from the various independent claims, which have been shown above to be patentable over the applied prior art. Moreover, the newly submitted claims provide Applicants with the scope of protection to which they are entitled.

Accordingly, Applicants respectfully request consideration of the newly submitted claims 8-16, and an indication of the allowability thereof in due course.

SUMMARY AND CONCLUSION

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so.

Applicants have amended the claims to enhance clarity and to define Applicants invention with specificity and without narrowing the claims in view of the prior art.

Applicants have further discussed the disclosure of the reference applied by the Examiner and have pointed out the substantial and significant shortcomings of the reference with respect to the pending claims. Applicants have additionally discussed the features of Applicants claims and distinguished the same from the disclosure of the reference relied upon. Accordingly, Applicants have provided a clear evidentiary basis supporting the patentability of all the claims in the present application and respectfully request an indication to such effect in due course.

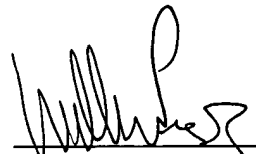
Applicants have submitted several additional claims for consideration and have provided a basis for their patentability.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

P24996.A08

Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Makoto TOYOTA et al.



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AMENDMENTS TO THE DRAWINGS

Attached to this Response, please find a replacement page for Fig. 2 which has been labeled "Prior Art" per the request of the Examiner.